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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Smith, Jr.
Application No.: 10/701,146
Filed: 11/4/2003
Title: Cargo Oriented Aircraft
Attorney Docket No.: 50121

Art Unit:
3644

Examiner:
Tien Dinh

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appeal Brief

(i) Real Party in Interest

The named inventor, Frank C. Smith, is the real party in interest.

(ii) Related Appeals and Interferences

A prior appeal, appeal No. 2007-2901 was decided December 12, 2007. A copy of the appellate Decision is included herein in the (x) **Related Proceedings Appendix**.

(iii) Status of Claims

Claims 1-12 are pending, rejected and appealed. A copy of the claims on appeal is in the (viii) **Claims Appendix**

(iv) Status of Amendments

All amendments have been entered.

(v) Summary of Claimed Subject Matter

A. Terms Used

(1) A "canard" is sometimes referred to as a "tail-first" aircraft. The term "two-surface" canard is used herein to refer to an aircraft having two, and only two, significant (i.e. non trivial, non de minimus) horizontal lifting surfaces (independent of the fuselage and any booms, to the extent they could be said to offer a lifting surface,) with the smaller lifting surface (the canard surface) in front (of the wing, of the larger lifting surface.) Spec 4 page line 29 – page 5 line 1. (Hence the "tail-first" moniker.)

(2) A "personal aircraft" is defined as an aircraft for six or less occupants and with a gross weight limit of 5000 pounds and a horsepower of less than or equal to 500 hp. Spec. page 5, lines 10-11.

(3) "Large objects" for personal aircraft refer to such things as a patient on a gurney, a man in a wheelchair, a coffin (a.k.a. a casket), a motorcycle, a four-wheeled vehicle such as a golf cart or ATV, sheet of plywood, etc., any of which could be carried by a typical small private plane under its volume and weight limitations if only it could be loaded aboard. Spec. page 3, lines 1-4.

B. Summary of Claimed Subject Matter

Appellant claims a cargo-oriented, personal aircraft comprising a ("tail-first") two-surface canard that includes a large opening at the rear of the fuselage for loading large (relatively speaking) objects into the aircraft. Spec. page 1, lines 5-7. Fig. 1A, 1B. The aircraft may have no empennage (no rear-fuselage control surfaces.) Spec. page 2 lines 5-8; page 3 lines 6-7.

The independent claims are claims 1 and 11.

MAP

(All Characters are found on Fig. 1A)

Specifically, independent Claim 1:

1. A cargo adapted personal aircraft (10) Fig. 1A [specification page 2 lines 16-17], comprising:

a two-surface canard (10) [specification page 2 lines 5-7; 25-26] having two and only two significant horizontal lifting surfaces, (12, 14) [specification page 2 lines 9-10; 29-30] with a smaller lifting surface (12) in front of a larger lifting surface; (14) [specification page 2 lines 24-25]

a large opening at the rear of the fuselage (under pivot 22) [specification page 4 lines 15-17] through which large objects, (28) [specification page 1 lines 5-6] including at least one of a motorcycle, (28) [specification page 3 lines 30-31] a patient on a gurney and a man in a wheelchair [specification page 3 lines 1-3] can be loaded, [specification page 1 lines 15-16, page 2 lines 30-32] the opening having a closure for flight (20) [specification page 2 line 32,] the personal aircraft having a gross weight limit of up to 5000 pounds and a hp limit of up to 500 hp [specification page 5 lines 10-11.]

Independent Claim 11:

11. A cargo-adapted personal aircraft (10) Fig. 1A [specification page 2 lines 16-17], comprising:

a two-surface canard (10) [specification page 2 lines 5-7; 25-26] having two significant horizontal lifting surfaces, (12, 14) [specification page 2 lines 9-10; 29-30] with a smaller lifting surface (12) in front of a larger lifting surface; (14) [specification page 2 lines 24-25]

a large opening at the rear of the fuselage (under pivot 22) [specification page 4 lines 15-17] through which objects (28), [specification page 1 lines 5-6] including at least one of a motorcycle (28) [specification page 3 lines 30-31], a patient on a gurney and a man in a wheelchair, [specification page 3 lines 1-3] can be loaded, [specification page 1 lines 15-16,

page 2 lines 30-32], the personal aircraft having a gross weight limit of up to 5000 pounds and a hp limit of up to 500 hp [specification page 5 lines 10-11]; and

having no empennage. [Figure 1A, specification page 1, footnote 1, page 2 lines 5-8, 11-12, page 3 lines 6-7.]

C. Problem and Solution

(1) Statement of Problem

There is a need for a cargo-oriented personal aircraft. There is a need for a capacity to load large objects into a personal aircraft which are within the weight and volume limits of the fuselage. There is room in a conventional personal aircraft, for a motorcycle, for instance, by volume and by weight, to solve the ground transportation need. However, there is no way to get the motorcycle into a conventional personal aircraft. Spec, page 1, lines 10-12; page 5 lines 6-9.

Rear fuselage doors are known, which permit loading bulky items, spec. page 1, lines 15-16, but aircraft designs incorporating rear fuselage doors utilize rear boom-supported empennages, like references Read and Rutan. Spec. page 1, lines 24-26; page 3, lines 9-13. Rear boom-supported empennages add too much weight, drag, expense and complexity to be practical in a personal aircraft. Spec. page 4 line 18.

(2) Solution and Path of Arriving at Solution

The inventor fortuitously, personally, received evidence of what, he recognized, as “satisfactory flight” of a two-surface canard, which, he appreciated, was “effectively” without an empennage, and which, he appreciated, was “effectively” with a large rear cargo load, analogous to a motorcycle. Such evidence, adroitly interpreted, combined with his sensitivity to a long-felt need for ground transportation for private aircraft, led to the conception of the instant invention: a (“tail-first”) two-surface canard with a large rear door for loading large (relatively speaking) cargo. Empennageless. There was no precedent for such craft, or public evidence of any such craft flying satisfactorily to his knowledge. The inventor had his own combination of personal experience, astutely interpreted, that substantiated the utility of his invention. Spec page 2 lines 3-8, 20-22; page 3 lines 6-16.

(vi) Grounds of Rejection to be Reviewed on Appeal

I. The rejection of claims 1-12 under paragraph 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement by containing subject matter not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention; more particularly, the assertion that claims 1 and 11 are misleading by incorporating the phrase “a two-surface canard, having two and only two significant horizontal lifting surfaces, with the smaller lifting surface in front of the larger lifting surface.”

II. The rejection of claims 1, 3-6 and 8-11 under 35 U.S.C. §103(a) as unpatentable over Rutan 4,641,800 in view of Rutan ATTT, and of dependant claims 2 and 12 further in view of Bumelli, and of